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ABSTRACT

Discussion reflects on the notions of the constructionist viewpoint in development, of integration, and of individual uniqueness, by drawing on studies of mother-infant interaction, the development of 24-hour infant state organization and regulation, and life span development. The logic of construction by which an individual shapes his or her long-term developmental trajectory is summarized in five propositions: (1) the infant's initial inner experience consolidates around the experience of his or her own recurrent states; (2) the infant's own states, where coherent, recurrent, desired, or essential to key regulatory coordinations become the primary goals for behavior; (3) infant competence in initiating and organizing self-regulatory behaviors to achieve desired states as goals represents a systems competence which insures a sense of agency in the infant; (4) each infant-caregiver system constructs its own unique configuration of regulatory constraint on the infant's access to awareness of his or her own states, inner experience, and access to options to initiate the organization of schemes of self-regulatory behavior on the basis of the criterion of inner experience; and (5) a continuing differentiation of the individual's competence as agent to reconstruct the array of familiar states under widening and changing contextual circumstances is an ongoing life span process. (RH)

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Twenty-Five Years Later: Some Reflections on Adaptive Issues in Early Infant-Mother Interaction"

- Louis W. Sander, M.D. -

(Third World Congress on Infant Psychiatry and Allied Disciplines, Stockholm - August 3-7, 1986)

The idea that infants and their mothers (caregivers) are negotiating a sequence of adaptive tasks through their interactions over the first three years of lif was first proposed in 1960 as a way of organizing the observational data that had been collected on thirty families in the Boston University Longitudinal Study between 1954 and 1959. This sequence provided a means of comparing across mother-infant pairs the extent to which adapted coordinations had been achieved in regard to these tasks, as well as a way to study individual differences in the behavioral strategies and solutions that had come to be characteristic of each pair's activities in this adaptive process (i.e. a process of mutual modification to reach an enduring harmony of coordination). (Table 1).

The longitudinal study has been conceived within the context of psychoanalytic developmental theory. Its title, "The Effect of Maternal Maturity and Immaturity on Child Development," attests to the search for causality in child character development that initially motivated us, and the limitations of our thinking at that time within the constraints of a concept of linear causality as being essential to our understanding of the course of child development. It was the struggle to organize our highly

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complex data that led to the consideration of more complex notions of field, system and process. As we tried to apply these ideas to the complexity of our observational, interview and test data of mother-infant interaction, we turned to biological models of living systems to provide the necessary principles by which we might sort out the different functions of, and various interrelationships between, the many realms of exchange and interaction we were observing. These obviously were shifting and changing as the infant grew and changed in regard both to his ability to initiate action and his repertoire of possible responses to the initiative of others.

Among the essential principles underlying the organization of exchanges in the living (biological) system that offered models of organization were those of regulation, adaptation and integration. Although less appreciated at the time, we felt it was necessary to include the structure imposed by biorhythmicity and the temporal organization of an array of vital rhythms. Biologists had made clear that highly complex organization in living systems exists at the outset and properties of endogenous self-activation and self-regulation are the essential capacities of organic life from its simplest levels. Also, it was clear that each infant arrived with differences in organization -- of states, sensory motor functions -- present capacity and future potential. These were general principles any model had to begin with.

In the latter half of the 1950s, as Piaget's ideas on adaptation and goal organized schema leading to a "construction" of reality were being disseminated and discussed, and new perceptual and information processing theory was being advanced, it was a setting in which a constructionist view of a sequence of interpersonal adaptations between infant and caregiver over the course of the first months of life might naturally be entertained. As Paul Weiss has pointed out, the essence in the achievement of an adaptation, is that the mutual coordination or fitting together must then endure over time. The idea of the negotiation between mother and infant of a sequence of adaptive tasks would provide a way of visualizing the mechanism of initial interpersonal behavioral organization. If viewed in terms of an epigenesis, this sequence of coordinations, arrived at by mutual adaptation, also suggests a way integration occurs in behavioral organization. These coordinations (adaptations) would reflect the way the individual organizational predispositions of infant and mother might culminate in enduring and unique but recurring regulatory solutions for the family (caregiving) system. These recurrent behaviors would be incorporated as a background behavioral and event structure of the system and provide a basis for a kind of continuity in the presence of which change and reorganization of the interacting partners could continue to proceed in a more differentiated foreground.

Thus far, then, these comments touch upon notions: of the constructionist viewpoint in development, of integration, and of

individual uniqueness. What I would like to do in these few minutes today is to offer a few reflections on these three quite disparate ideas, by drawing from the three areas of research that our group has been involved in over the years. The first, just described, was the detailed observational study of mother-infant interaction over the first three years of life; the second, a study of the development of 24-hour infant state organization and regulation along the sleep-awake dimension over the first two months of life; and the third, the study of the 25-30 year life span of development on those same individuals we observed so closely as infants. From there what I would like to do is propose a ground plan for our thinking about the life span trajectory as a construction. It is important to be clear that I am presenting these comments as ideas, as reflections, as ways of thinking about life span development -- not as findings, or direct results of empirical analysis.

We are beginning to think differently about early development these days than we did a decade ago, going now from ideas of linear causality to systems thinking and the matter of "organization" -- the "organizational perspective" -- as Alan Sroufe refers to it. We have gone from the search for cause to the search for process. In living systems it is not organization that <u>develops</u>; we <u>begin</u> with organization -- the organism <u>always</u> in regulated, ongoing exchange with the surround -- having an endogenous origin of "primary activity" as von Bertalanffy has put it, which ensures self-activation, self-regulation, stimulus-

seeking -- that is, a self-organizing complex.

In taking this organizational perspective, we begin with a great many already established lawful principles that have advanced the understanding of organization in living systems. Major examples of bodies of lawful principles that govern the ongoing exchange between organism and environment are the ones we began with: those of regulation -- of adaptation -- or "fitting together," with a central principle of specificity as the essential ingredient that insures "fitting together" at every level of adaptation, as emphasized so lucidly by Paul Weiss.

Integration is another domain of lawful principles. There are a great number of ways living systems accomplish integration which cannot be detailed at this point -- but a word must be said about state -- for example, the recurrently recognizable states of the newborn on the sleep-awake continuum. Here in the healthy newborn there is an integration of a remarkable complexity of physiological subsystems that can be read at once in a single pattern of behavioral variables -- the same is true of emotional states -- a subject of great current research interest.

We cannot escape the fact that on another level, inner experience in the domain we call the sense of self, we also see a remarkable integration of components -- from the sense of the body in space -- through the sense of agency -- to include what Winnicott has termed the infant's sense of "own" or of being oneself, in other words, a sense of self-recognition in what one is experiencing. As Erikson long ago suggested in formulating

his final stage of development, these constructionist principles move us, on the life span trajectory, toward that final stage of integration he labeled simply: "integrity."

In reflecting on our three areas of research, all that I have time to mention about the first -- our study of adaptive issues in mother-infant interaction over the first three years of life -- is that it was our first effort to propose a constructionist view -- to propose a logical sequence of adaptations by which the self-activating, self-regulating principles governing the exchange between infant and caregiving environment could construct the conditions necessary for recurrent, coherent inner experiences in the infant. The idea was that such recurrent, coherent and desired inner experiences of the infant, in the negotiation of each level of mutual adaptation between infant and caregiver, established such inner experience as the inner <u>set-point</u> or goal criterion around which new inputs could be matched and the modifications necessary for goal-realization could be generated -- goal realization now being a re-experience of the desired state. In this sequence of issues we went from adaptations related to initial sleep-awake state regulation, to reciprocal behavioral coordination -- "tuning" as Dan Stern would describe it -- to "Recognition" as the sixth issue late in the second year of life. This is a time when much interaction is being carried out on the level of perceived or inferred <u>intention</u> of behavior both by infant and caregiver. At issue here again is the <u>specificity</u> which the infant experiences in becoming aware

that another is aware of what he is aware of within himself. At issue is the support the system provides in enabling the infant to use this inner perception successfully to regulate his own behavior and pari passu his own state or inner experience of it within his particular caregiving system. It is a time of experience of validation or invalidation by the infant of inner experience as a guide for ensuing construction of new adaptive schemes.

There is just not time to describe the second area of our research concerning the initial regulation of infant states over the first two months except to say that in that extensive work we were introduced to a whole domain of organizational principles related to biorhythmicity, entrainment, phase synchrony, and especially "coherence." Here again, there is another realm of lawful principles. Three central factors in the organization of the infant-caregiver system should be mentioned that stem from the basic role of biorhythmicity in the organization of living systems. One condition the cyclic nature of biorhythmicity sets up in the system is the recurrent situation, an essential condition for habituation and learning; a second is the shared time-structure of the 24-hour day, at a point when adaptation has been achieved between mother and infant. Such shared time-structure provides for each partner a common basis for meaning of behavior in the day's sequence of events; and a third element is the experience of "meeting" in states of matched readiness or expectancy -- a matter of profound significance in biasing infant ex-

pectation for what is "given" in relation to what is to be "gotten."

The third area of our research concerns the study of the life span of the 30 infants we began with in formulating our constructionist view of development in terms of this sequence of issues of interaction -- Of this, I have time to say only one thing -- we have been unable to escape the actuality of uniqueness in every aspect of each subject's data. The closer one looks, the greater individuality is apparent. The significance of uniqueness is not how one can judge that uniqueness from normative standards but what processes and relationships account for it, and depend on it, and what the significance is of recognizing the specific ways an individual <u>is</u> unique. We ask: In what degree is recognition of that uniqueness a necessary element in shaping the individual's construction of his life span trajectory? We can ask, after decades of studying the normative, is it possible that attention to uniqueness will now have a new significance in developmental research? It will certainly be central if we are to address the <u>optimizing</u> of early developmental process rather than continuing to limit ourselves to the repair of its tragedies and deficits. As you are aware, a major effort in the "self-psychology" approach is that of enabling the individual not only to discover his own innner experience but to recognize, validate and esteem its uniqueness.

The hypothesis that we are looking at in the longitudinal study follow-up is that the configuration of adaptive strategies

that the child by 2 years of age has constructed, in "fitting together" with his own particular unique caregiving context, provides a configuration that is recognizable in the way that individual at outcome twenty-five to thirty years later is constructing his ecologic niche and his world of self-regulation. This is a "recognizability" of configuration, not a correlation.

What if instead of beginning our conceptualization of psychological development with an undifferentiated newborn, we began with the idea that the organizing process in development begins with specificity in the exchanges between infant and caregiver that are at the highest and most differentiated level of organization each is capable of, i.e. the organization of awareness -- consciousness -- with the idea that "experiencing" is possible from the outset especially in terms of one's own inner state -- which, as I have noted in speaking of the biorhythmic structure of organization in the infant-caregiver system -- is regularly recurrent. It might be the way -- from the outset -- that the highest levels of organization possible come into a specificity of exchange that plays a critical role in biasing the sequential logic organizing the longer term trajectory of developmental construction. Remember, I am here thinking of the prerepresentational experience, of the earliest months of life where the infant's action directly can change his own state not some representation or symbol of it. If inner awareness is the critical experience, construction proceeds as this awareness becomes the inner criterion or set point of the goal organizing

schema. This would be especially possible when such awareness is based on the experience of one's competence in regulating one's own desired states, which in a competent system, with it's regularly recurrent interactive situations, can become goals.

These ideas can be summarized in a framework of five propositions. At the moment they can be thought of as a kind of logic of construction by which the individual shapes his longer-term developmental trajectory. Very briefly, the five steps run somewhat as follows:

1. The infant's initial inner experience consolidates around the experience of his own recurrent states. The initial ego is not a body ego but a state ego.

2. The infant's own states, where coherent, recurrent, desired, or essential to key regulatory coordinations, become the primary target or goals for behavior. By states we must include emotional states that have their own configurational indicators from birth onward. Here the importance of positive affects in the system lies in their essential contribution to the establishment of goals for behavioral organization.

3. Infant competence in initiating and organizing self-regulatory behaviors to achieve desired states as goals represents a systems competence, i.e. dependent on facilitation of goal realization, as well as providing conditions for the infant's initiation of this goal-organized behavior. Such systems competence insures a sense of agency in the infant. The emergence of infant-as-agent must be granted by the system because it means a reorganization of the system to admit the newcomer.

4. Each infant-caregiver system constructs its own unique configuration of regulatory constraint on the infant's access to awareness of his own states, his own inner experience and his access to options to initiate the organization of schemes of self-regulatory behavior on the basis of this criterion of inner experience. These configurations then become a repertoire of enduring coordinations or a repertoire of adaptive strategies between the interacting participants, of each infant-caregiving system. These strategies set the conditions in the system by which the infant can construct situations in which he can re-experience a knowing of, or recogni-

tion of himself. Construction of experiences in which one recognizes himself in terms of re-experiencing familiar states, is the vehicle by which a sense of continuity of self is conveyed. The experience of self-recognition constitutes a parameter which biases the infant's later construction of his ecologic niche in which the same repertoire of adaptive strategies, which now can be called self-regulatory, promise the experience of a familiar continuity of predictable self-recognition.

5. A continuing differentiation of the individual's competence as agent to reconstruct the array of familiar states under widening and changing contextual circumstances is an ongoing life span process. It remains biased by the organizing logic of the early experience that first confirmed continuity by recreation of familiar inner experience consequent on individual uniqueness, a repeated process, becoming ultimately the construction of that individual's life span trajectory. Differentiation and continuity proceed in a close and paradoxical connection with competence of regulatory coordination in the system. The better regulation is achieved in the system, the better increasing differentiation proceeds and, paradoxically, the experience of continuity.

In conclusion, then, an interest in the course or trajectory of the quality of inner experience, or experience of one's own state, is exactly what you might expect of the interest of a psychoanalyst in training who turns to early developmental research to understand psychoanalysis. It is anchoring to realize that this need to gain perspective on our own experience of "being" over time has been felt by mankind almost back to its dim origins in history. In ancient Sanskrit, nearly 4,000 years ago, noun usage was derived from reference to appropriate verbs. There was an expression for person -- the word "perusha" -- from which our noun "person" later emerged. One must think for a moment to imagine what the verb or action construction might be by which one might designate the noun "person" and be generally un-

derstood in the community. In those times, Perusha meant: "consciousness constructing for itself a form." It is hard for me today to think of a more profound designation of the organizing process constructing the trajectory of a person's life span.